ANNUAL UPDATE

Electronic Imaging 1984 Editorial Index

SENSORS/SOURCES

Circular Photodiode Array for Focusing and Tracking
January 1984, p. 54
By fabricating a circular array of photodiodes, faster measurements of angle movements can be made.

CCD Imaging System Uses Video Graphics Controller
February 1984, p. 28
Off-the-shelf hardware allows a low-light level image capture and processing system to be built at a relatively low cost.

Automatic Detection of Semiconductor Reticle Contaminants
February 1984, p. 56
Light scattering techniques are used for automatic detection of microlithographic reticle surfaces.

Infrared Optics for Thermal Imaging
March 1984, p. 46
Combination laser and IR devices are used to capture images shrouded by darkness, smoke and haze.

Solid-State Camera Design and Applications
April 1984, p. 38
Advances in solid-state sensor technology have allowed cameras with very high resolution to be developed. Applications include remote sensing, robotics vision and image analysis.

Intensified CCD Camera Uses Fiber-Optic Coupling
May 1984, p. 52
Increasing the sensitivity of CCD-based cameras allows their use in low-light level applications.

Pyroelectric Infrared Detectors
June 1984, p. 66
Theory and design of pyroelectric IR detectors are discussed together with some of their applications.

Special Purpose Input Devices
July 1984, p. 47
Many different types of input devices are now being used to streamline user productivity in computer systems.

Solid-State Lasers and Applications
July 1984, p. 58
Information collection, storage, processing and display are among the new applications for solid-state lasers.

Advances in Linear Solid-State Sensors
August 1984, p. 72
As solid-state sensors are used in an increasing number of applications, more and more functions are being incorporated on-chip.

Image Scanners Speed Data Acquisition
November 1984, p. 46
Today's available image scanners allow users to accurately digitize images, text and objects into computer systems.

CCD Cameras for Machine Vision
November 1984, p. 58
Robots are now being equipped with solid-state cameras to recognize patterns and to place robot arms.

Linear Arrays for Infrared Imaging
December 1984, p. 47
At CalTech, high-performance IR arrays have been used to develop an IR telescope camera.

PROCESSING

Histogramming Board Eliminates Software Overhead
January 1984, p. 50
A Multibus board has been developed to eliminate the software associated with histogramming and feature extraction.

Graphics Controller for High Resolution Displays
January 1984, p. 60
Three Multibus boards form the basis of a high resolution graphics controller.

TTL Video DAC Eliminates Level Translators in Display Design
January 1984, p. 66
A high-speed video DAC directly interfaces to TTL logic.

Co-processors Improve Text Quality
February 1984, p. 38
Clustering multiple 82730 co-processors extends the capabilities of single co-processors.

Using ADPCM for Image Compression
February 1984, p. 44
Adaptive differential pulse code modulation (ADPCM) can be used to compress image sources.

Optimizing Flash Converter Performance
March 1984, p. 48
To overcome the problems associated with flash-type converters, track-hold amplifiers can be used.

ISSCC Highlights IC Advances
March 1984, p. 56
At last year's International Solid-State Circuits Conference many new sensors, converters and image processors were introduced.

Hardware for Geometric Warping
April 1984, p. 50
Fast RAMs coupled with bit-slice technology has led to the development of a single PCB for geometric warping.

Array Processor-Based Computer for APL
April 1984, p. 56
An APL system has been developed around an array processor, I/O subsystem and an intelligent workstation.

High-Speed Multiprocessor Systems
April 1984, p. 63

High-speed RISC-type processors coupled with industry-standard computer architectures will speed the development of multiprocessor systems.

Architectural Considerations in Array Processing
May 1984, p. 70
Array processors provide cost effective solutions to computationally intensive problems.

Graphics Controller Implements Bit Block Transfer
June 1984, p. 76
A Multibus graphics controller has been developed which provides resolution of 1408 × 1100 × 1 in a non-interlaced 60Hz format.

VLSI in CAD System Design
July 1984, p. 68
Dynamic RAMs and high-speed processors are leading the advances in today's CAD systems.

High-Speed Image Processing and Display
August 1984, p. 38
Recognizing the trend toward processing larger images of higher resolution, a system has been introduced which anticipates these demands.

High Resolution Digital Image Processing
August 1984, p. 46
An image processor designed to capture, process and display 1024 line images while keeping complexity comparable to 512 line systems has been developed.

High-Speed ADCs and DACs
August 1984, p. 55
An integral part of many imaging systems, ADCs and DACs provide an interface between computers and external devices.

Multibus Image Processor Supports 512 × 512 Displays
October 1984, p. 42
A single-board controller has been developed to support image acquisition, processing and display.

Image Processing with the IBM PC
October 1984, p. 48
Coupling a video acquisition board with an array processor has allowed an image processor to be introduced based around the IBM PC.

Microcomputer-Based Systems for Remote Sensing
November 1984, p. 38
Powerful microcomputers have begun to make significant impacts on technical and scientific applications including image processing.

High-Speed Low-Light Level Imaging Systems
November 1984, p. 44
Analysis of low-light level images has been augmented by the use of digital image acquisition equipment.

Digital Radiography Techniques
November 1984, p. 50
Digital radiography has become increasingly important in the development of non-invasive diagnostic and treatment techniques.

Interfacing Video Display Processors to Color Monitors
November 1984, p. 62
Composite video converters allow designers to interface video processors to color monitors.

Data Flow Processor Speeds Imaging Tasks
December 1984, p. 42
Data flow architecture has been implemented on a single monolithic IC for image processing functions.

DISPLAYS

Autoconvergence Enhances High Resolution Display
January 1984, p. 30
Using optical feedback to sense the location of electron beams has permitted the development of a CRT monitor with a convergence of less than 0.2mm.

Flat Panel Display Technologies
January 1984, p. 40
CRTs are being replaced in many applications by lower power, lighter weight flat panel displays.

Multiple Form Production with Impact Printers and Carbonless Papers
January 1984, p. 62
Carbonless papers are being used with impact printers for multiple form production in small and medium computer installations.

CRT Film Recorders Offer Quick Prints and Slides
February 1984, p. 18
CRT film recorders allow users to obtain hardcopy output from CRTs.

Two-Dimensional Light Modulator for Signal Processing
February 1984, p. 48
A light-modulator for instrument panel readouts, flat helmet mounted and head-up displays.

Intelligent Printers and Plotters
March 1984, p. 38
Local intelligence of output devices simplifies software development and reduces data I/O and host computation.

High Resolution Monitor Design
March 1984, p. 51
Today's systems have pushed the requirements of CRT-based monitors to the limits of device technology.

Printer and Plotter Technology
March 1984, p. 58
A broad range of printing and plotting capabilities is available for varying user requirements.

Color Film Recorder Design
May 1984, p. 42
Design of CRT film recorders demands critical selection of CRTs and electro-optical components.

State-of-the-Art Displays Shown at SID
May 1984, p. 58
This year's Society for Information Display conference and show will highlight recent advances in display technology.

Vectorscope Measurement Techniques
August 1984, p. 64
Vectorscopes can be used to provide valuable information for the evaluation of video chrominance signals.

Laser Printers and Systems
October 1984, p. 28
Laser printer technology will allow OEMs to combine both graphics and images for applications such as in-house publishing systems.

Photocapsule Process for Hardcopy Output
October 1984, p. 35
Microencapsulated photopolymers form the basis of a new silverless color print process.

Liquid Crystals in Flat Panel Displays
November 1984, p. 54
Liquid crystal technology is now appearing in color flat panels for data terminal and television use.

Stereoscopic and 3D Graphic Display Systems
December 1984, p. 50
In three-dimensional computer graphics systems, the terms stereoscopic and three-dimensional have been confused.

SYSTEMS/ APPLICATIONS

Image Analysis of Geophysical Data
January 1984, p. 22
Image analysis techniques, developed for LANDSAT data, can be significant in interpreting geophysical data.

Machine Vision in Harsh Environments
January 1984, p. 36
Industrial inspection is becoming more common with the declining cost of image processing systems.

Robotics Vision Systems Design
February 1984, p. 33
Many of today's robotics vision systems use third party hardware to be upgraded quickly.

Automatic Digitizing for Computer Graphics
February 1984, p. 54
Complex graphic data sets can now be input to computer-based systems.

Stereo Vision Guided Robotics
February 1984, p. 62
Stereo vision allows robotics systems to judge depth information as well as capture images to be inspected.

Computer Graphics in Battlegames Simulation
April 1984, p. 22
One of the newest uses of computer graphics is not cinematic animation, but Army battlegames simulation.

Trends in Remote Sensing
April 1984, p. 30
Today, multi-spectral sensor technology and data reduction techniques are making remote sensing data available to new disciplines.

Computer Graphics '84: A Technology Showcase
May 1984, p. 26
Computer Graphics '84, the annual conference of the NCGA, presented a broad overview of computer products.

Computer Animation Finds New Frontiers
June 1984, p. 24
Advances in electronic imaging have led to the use of animation in simulation, broadcast effects and instruction systems.

Data Base Considerations in Small Scale Mapping
June 1984, p. 40
Small scale maps are now being created on digital systems with little or no loss of cartographic quality.

Military Imaging Systems
June 1984, p. 54
Military imaging systems pose challenges to designers in the selection of sensors, processors and displays.

SIGGRAPH Sets Pace for Graphics Industry
July 1984, p. 24
SIGGRAPH was held last year in Minneapolis, MN, and highlighted new product advances.

Medical Imaging Hardware
July 1984, p. 36
Medical imaging systems have brought together all aspects of electronic imaging from image detection and processing to image display.

EI '84 Defines Electronic Imaging
August 1984, p. 26
The first Electronic Imaging conference and show was held September 10-13, 1984 in Boston, MA. At the show, many major product introductions were made, many of which are highlighted in this article.

Fiber-Optic Systems
August 1984, p. 66
Fiber-optic systems are becoming increasingly important due to the fiber's high bandwidth characteristics and low transmission losses.

Publishing Workstation Design
October 1984, p. 68
Integrating both art and text into a single database is the goal of new publishing workstation designs.

Electronic Imaging in the Graphic Arts
November 1984, p. 30
Electronic imaging has assumed an

important role in the graphic arts, especially in pre-press operations.

Machine Vision System for Automated Inspection
December 1984, p. 24
Based on a proprietary high-speed bus, an image processing system has been developed for machine vision applications.

Reprographic Imaging Techniques
December 1984, p. 53
Photoreceptors are used to capture visible information and to retain it long enough to allow the information to be made visible again.

MEMORIES

Video Frame Store Design
February 1984, p. 52
Video frame stores use state-of-the-art technology to capture images for later analysis.

Eliminating I/O Bottlenecks in AP Systems
February 1984, p. 66
Auxiliary memory devices are used to increase throughput in array processor systems.

Optical Storage Meets Increased Data Demands
March 1984, p. 30
Offering gigabyte and even terabyte capacities in single drives, optical memory has finally arrived.

Bubble Memories for Image Storage
April 1984, p. 47
Bubble memories are finding increased use in non-volatile, high density memory applications.

High Performance Dynamic RAMs
October 1984, p. 64
New 256k and 1M-bit architectures will feature CAS-before-RAS refresh, serial accessing and static column decoding.

SOFTWARE

Interactive Software for Image Processing
March 1984, p. 22
Interactive image processing software is now available which allows rapid development of programs.

Programming Array Processors
June 1984, p. 48
Array processors can be used to speedup computationally intensive applications.

Partitioning Large Structured Problems
October 1984, p. 56
In multiple array processor systems, large tasks may be assigned to different machines, providing an increase in efficiency.

Programming for Multiprocessor Designs
October 1984, p. 59
Designs of multi-microprocessor arrays will allow execution times of programs to be reduced. □

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Pertinent to current work	618
Useful for future reference	619
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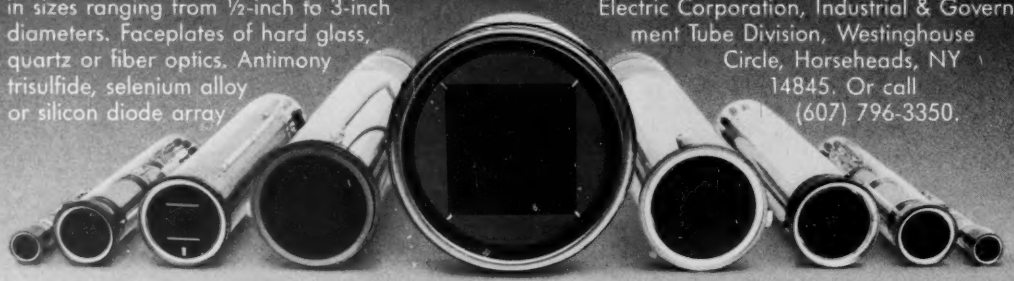

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